

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Monongahela River.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Weston, W. Va.	101	18	2.5	2	0.8	24-26	0.6	3.3
Fairmont, W. Va.	119	25	4.8	15	0.6	9, 10	1.9	4.2
Greensboro, Pa.	81	18	10.5	15	7.5	10	8.3	3.2
Lock No. 4, Pa.	40	28	11.5	16	6.9	10	8.3	4.6
<i>Conemaugh River.</i>								
Johnstown, Pa.	64	7	2.4	29	1.0	28	1.5	1.4
<i>Red Bank Creek.</i>								
Brookville, Pa.	35	8	0.9	2	0.4	17, 24	0.6	0.5
<i>Beaver River.</i>								
Ellwood Junction, Pa.	10	14	2.7	1	0.6	24	1.3	2.1
<i>Great Kanawha River.</i>								
Charleston, W. Va.	61	30	10.0	15	4.9	20	6.9	5.1
<i>New River.</i>								
Hinton, W. Va.	95	14	5.0	14	1.9	9-11, 24-26	2.6	3.1
<i>Cheat River.</i>								
Rowlesburg, W. Va.	36	14	8.0	16	2.0	1, 6-8, 13	3.9	6.0
<i>Ohio River.</i>								
Pittsburg, Pa.	966	22	7.2	16	3.2	6	5.5	4.0
Davis Island Dam, Pa.	960	25	7.9	1	3.5	27	5.1	4.4
Wheeling, W. Va.	876	36	9.8	1	4.0	28	6.3	5.8
Parkersburg, W. Va.	786	36	11.8	2	6.0	30	8.0	5.8
Point Pleasant, W. Va.	708	39	14.6	3	5.0	30	8.3	9.6
Catlettsburg, Ky.	651	50	17.2	4	7.4	30	10.9	9.8
Portsmouth, Ohio	612	50	17.6	4	8.8	30	11.9	9.8
Cincinnati, Ohio	492	50	18.7	5	11.0	13, 28	13.6	8.8
Louisville, Ky.	367	23	7.9	7	5.8	14, 15, 30	6.6	2.1
Evansville, Ind.	184	35	13.3	9, 10	8.6	30	10.7	4.7
Paducah, Ky. ¹	47	40	14.9	1	8.5	30	12.1	6.4
Cairo, Ill.	1,073	45	27.9	1	21.5	30	25.3	6.4
<i>Muskingum River.</i>								
Zanesville, Ohio.	70	20	12.1	2	6.4	19	8.3	5.7
<i>Miami River.</i>								
Dayton, Ohio.	69	18	1.7	1	0.9	29, 30	1.3	0.8
<i>Wabash River.</i>								
Mount Carmel, Ill.	50	15	6.4	5	2.4	30	4.0	4.0
<i>Licking River.</i>								
Falmouth, Ky.	30	25	3.5	16	1.3	2, 7, 8	2.0	2.2
<i>Clinch River.</i>								
Speers Ferry, Va.	156	20	5.3	14	0.2	9, 10	9.4	5.6
Clinton, Tenn.	46	25	9.5	16	3.4	12	4.8	6.1
<i>Tennessee River.</i>								
Knoxville, Tenn.	614	28	3.1	16	0.1	24	0.9	3.0
Kingston, Tenn.	534	25	3.7	2	1.4	24, 25	2.6	2.3
Chattanooga, Tenn.	430	33	6.6	17	3.0	26	4.4	3.6
Bridgeport, Ala.	390	34	4.5	16, 18	1.4	27	2.6	3.1
Florence, Ala.	230	16	3.8	20	1.2	30	2.3	2.6
Riverton, Ala.	190	25	4.2	18, 20	0.7	29, 30	2.3	3.5
Johnsonville, Tenn.	94	21	5.1	21, 22	2.5	30	3.7	2.6
<i>Cumberland River.</i>								
Burnside, Ky.	434	50	4.9	3	1.6	25	2.5	3.3
Carthage, Tenn.	257	30	4.2	4	1.5	28-30	2.5	2.7
Nashville, Tenn.	175	40	5.6	5, 6	2.1	30	3.7	3.5
<i>Arkansas River.</i>								
Wichita, Kans.	720	10	6.3	10	1.6	1, 2	3.5	4.7
Webbers Falls, Ind. T.	407	23	15.9	14	5.0	28, 30	8.9	10.9
Fort Smith, Ark.	345	22	16.3	15	6.3	30	7.0	10.0
Dardanelle, Ark.	250	21	16.4	16	5.7	30	10.3	10.7
Little Rock, Ark.	170	23	16.9	17	7.0	30	11.5	9.9
<i>White River.</i>								
Newport, Ark.	150	26	14.3	8	3.5	30	7.4	11.8
<i>Yazoo River.</i>								
Yazoo City, Miss.	80	25	11.6	1	2.1	30	6.6	9.5
<i>Red River.</i>								
Arthur City, Tex.	688	27	17.4	19	8.3	8	11.8	9.1
Fulton, Ark.	565	28	21.8	2	9.0	30	15.2	12.8
Shreveport, La.	449	29	12.5	23	9.7	1, 12	11.2	2.8
Alexandria, La.	139	33	11.5	9	8.6	16	9.9	2.9
<i>Ouachita River.</i>								
Camden, Ark.	340	39	31.4	3	5.1	28	14.0	26.3

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Ouachita River—Con.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Monroe, La.	100	40	22.4	16	8.4	30	19.4	14.0
<i>Atchafalaya Bayou.</i>								
Melville, La.	100+	31	30.5	1	26.3	30	28.4	4.2
<i>Susquehanna River.</i>								
Wilkesbarre, Pa.	178	14	0.8	30	0.0	1-28	0.0	0.8
Harrisburg, Pa.	70	17	2.6	2	1.0	24	1.7	1.6
<i>W. Br. of Susquehanna.</i>								
Williamsport, Pa.	35	20	2.4	1.2	0.5	22, 24	1.3	1.9
<i>Juniata River.</i>								
Huntingdon, Pa. ²	80	24	3.5	3-6	3.0	10-30	3.1	0.5
<i>Potomac River.</i>								
Harpers Ferry, W. Va.	170	16	3.6	3	1.7	28-30	2.4	1.9
<i>James River.</i>								
Lynchburg, Va.	287	18	1.9	14	0.2	24-28	0.9	1.7
Richmond, Va.	110	12	0.9	14, 15, 23	-0.2	23, 25	0.3	1.1
<i>Roanoke River.</i>								
Clarksville, Va.	155	12	8.2	14	2.0	26	3.4	6.2
Weidon, N. C.	90	40	27.5	14	7.5	9, 10	10.9	20.0
<i>Cape Fear River.</i>								
Fayetteville, N. C.	100	38	11.1	14	2.5	26	5.1	8.6
<i>Lumber River.</i>								
Fairbluff, N. C.	10	6	4.5	17-19	1.2	30	3.2	3.3
<i>Edisto River.</i>								
Edisto, S. C.	75	6	4.6	22, 23	2.8	8, 9	3.3	1.8
<i>Pee Dee River.</i>								
Cheraw, S. C.	145	27	6.9	15	1.0	27	2.8	5.9
<i>Black River.</i>								
Kingstree, S. C.	60	12	1.7	1	1.0	20, 21	1.4	0.7
<i>Lynch Creek.</i>								
Effingham, S. C.	35	12	4.1	23	2.6	30	3.2	1.5
<i>Santee River.</i>								
St. Stephens, S. C.	50	12	5.5	18	1.7	29	3.6	3.8
<i>Congaree River.</i>								
Columbia, S. C.	37	15	1.1	14	0.0	25	0.5	1.1
<i>Wateree River.</i>								
Camden, S. C.	45	24	8.8	12	4.3	27	5.8	4.5
<i>Waccamaw River.</i>								
Conway, S. C.	40	7	4.0	24	1.7	8, 9	2.6	2.3
<i>Savannah River.</i>								
Calhoun Falls, S. C.	.....	.....	5.0	18	2.9	7, 24, 25	8.4	2.1
Augusta, Ga.	130	32	9.8	14	6.3	26	7.5	3.5
<i>Broad River.</i>								
Carlton, Ga.	.....	.....	3.7	13, 26	2.3	23-25	2.6	1.4
<i>Flint River.</i>								
Albany, Ga.	90	20	2.4	1, 2	0.3	22-23	1.2	2.1
<i>Chatahoochee River.</i>								
West Point, Ga.	239	20	4.1	15	2.5	23	3.1	1.6
<i>Cosa River.</i>								
Rome, Ga.	225	30	4.0	14	1.7	23-26	3.2	2.3
Gadsden, Ala.	144	18	3.3	15, 16	0.7	24-28	1.5	2.6
<i>Alabama River.</i>								
Montgomery, Ala.	265	35	3.8	4	1.2	23-25	2.5	2.6
Selma, Ala.	212	35	4.5	1	1.4	24, 25	2.9	3.1
<i>Tombigbee River.</i>								
Columbus, Miss.	235	33	-1.3	25	-2.9	23	-2.3	1.6
Demopolis, Ala.	155	35	1.3	1	-1.9	21	-0.7	3.1
<i>Black Warrior River.</i>								
Tuscaloosa, Ala.	90	38	2.0	1	-0.1	23-25	0.5	2.1
<i>Columbia River.</i>								
Umatilla, Ore.	270	25	25.2	21	17.1	1	21.4	8.1
The Dalles, Ore.	166	40	43.0	22	28.5	1	36.3	14.5
<i>Willamette River.</i>								
Albany, Ore.	99	20	8.0	3	5.0	2, 3	6.6	3.0
Portland, Ore.	10	15	24.2	23	17.1	1	21.1	7.1
<i>Sacramento River.</i>								
Red Bluff, Cal.	241	23	4.	1	0.9	29, 30	1.7	3.7
Sacramento, Cal.	70	25	17.2	6	12.0	30	14.9	5.2

¹ Record for 30 days.² Record for 28 days.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

Alabama.—The mean temperature was 79.8°, or 2.2° above normal; the highest was 105°, at Selma on the 23d, and the lowest, 49°, at Ontario on the 18th. The average precipitation was 2.54, or 1.87 below normal; the greatest monthly amount, 9.50, occurred at Daphne, and the least, 0.64, at Eufaula.—*F. P. Chaffee.*

Arizona.—The mean temperature was 78.8°, or 1.6° below normal; the highest was 120°, at Aztec and Parker on the 30th, and at Texas Hill on the 17th and 29th, and the lowest, 25°, at Prescott on the 2d.

The average precipitation was 0.82, or 0.71 above normal; the greatest amount, 2.52, occurred at Pantano, while none fell at Buckeye and Sentinel.—*W. G. Burns.*

Arkansas.—The mean temperature was 77.3°, or 0.1° above normal; the highest was 102°, at Jonesboro on the 5th, and the lowest, 50°, at Witts Springs on the 18th. The average precipitation was 2.74, or 1.22 below normal; the greatest monthly amount, 5.90, occurred at Pond, and the least, 0.20, at Luna Landing.—*E. B. Richards.*

California.—The mean temperature for the State, obtained by weighting the reports from 290 stations, so that equal areas have about the same weight, was 71.5°, or 0.5° above the June normal for the State, as determined from 201 records; the highest was 122°, at Volcano Springs, on the 13th, and the lowest, 23°, at Bodie on the 26th. The average precipitation for the State, as determined by the records of 300 stations, was 0.57; the excess, as indicated by reports from 167 stations which have normals, was 0.30; the greatest monthly amount was 4.05,

at Delta, Shasta County, while none fell at 44 stations.—*Alexander G. McAfee.*

Colorado.—The mean temperature was 62.1°, or 1.0° below normal; the highest was 106°, at Lamar on the 18th and 19th, and Holyoke on the 19th, and the lowest, 18°, at Troutvale on the 1st. The average precipitation was 1.26, or practically normal; the greatest monthly amount, 3.48, occurred at Fox, and the least, 0.07, at Fort Morgan.—*F. H. Brandenburg.*

Florida.—The mean temperature was 80.4°, or about normal; the highest was 104°, at McClenny on the 16th, and the lowest, 53°, at McClenny on the 18th. The average precipitation was 5.43, or 1.57 below normal; the greatest monthly amount, 11.57, occurred at Plant City, and the least, 0.63, at Merritt's Island.—*A. J. Mitchell.*

Georgia.—The mean temperature was 80.2°, or 2.2° above normal; the highest was 100°, at Leverett, on the 8th and the lowest, 49°, at Jesup on the 19th. The average precipitation was 2.59, or 2.50 below normal; the greatest monthly amount, 7.84, occurred at Blakely, and the least, 0.55, at Putnam.—*J. B. Marbury.*

Idaho.—The mean temperature was 58.4°, or 1.5° below normal; the highest was 103°, at Hagerman and Oakley on the 18th and 17th, respectively, and the lowest, 17°, at Paris on the 8th. The average precipitation was 0.73, or 0.29 below normal; the greatest monthly amount, 1.76, occurred at Murray, and the least, trace, at Chesterfield and Downey.—*S. M. Blandford.*

Illinois.—The mean temperature was 73.3°, or about 0.8° above normal; the highest was 100°, at Ottawa on the 19th, and the lowest, 37°, at Chemung on the 16th. The average precipitation was 2.75, or about 1.09 below normal; the greatest monthly amount, 6.55 occurred at Alton, and the least, 0.86, at Glenwood.—*C. E. Linney.*

Indiana.—The mean temperature was 73.5°, or 1.4° above normal; the highest was 99°, at Vincennes on the 5th and 6th, and the lowest, 38°, at Winamac on the 16th and Delphi on the 17th. The average precipitation was 2.86, or 0.75 below normal; the greatest monthly amount, 7.65, occurred at Vevay, and the least, 0.60, at La Port.—*C. F. R. Wapenhans.*

Iowa.—The mean temperature was 70.7°, or about 0.7° above normal; the highest was 100°, at Clarinda and Stuart on the 18th, and the lowest, 42°, at Decoreh, Maquoketa, West Branch, and Ruthven on the 16th, 17th, 12th, and 15th, respectively. The average precipitation was 5.04, or 0.78 above normal; the greatest monthly amount, 11.99, occurred at Logan, and the least, 1.10, at Lockridge.—*J. R. Sage, Director; G. M. Chappel, Assistant.*

Kansas.—The mean temperature was 73.9°, or 0.1° below normal; the highest was 110°, at Viroqua and Wallace on the 19th, and the lowest, 40°, at Colby on the 6th. The average precipitation was 5.53, or 1.24 above normal; the greatest monthly amount, 11.17, occurred at Dodge, and the least, 0.58, at Viroqua.—*T. B. Jennings.*

Kentucky.—The mean temperature was 78.1°, or 1.0° above normal; the highest was 100°, at Bowling Green on the 27th and Paducah on the 5th, and the lowest, 44°, at Loretto and Marrowbone on the 14th. The average precipitation was 2.80, or 1.38 below normal; the greatest monthly amount, 5.54, occurred at Maysville, and the least, 0.14, at Canton.—*H. B. Hersey.*

Louisiana.—The mean temperature was 79.8°, or 0.3° below normal; the highest was 102°, at Liberty Hill on the 3d, and the lowest, 50°, at Cheneyville and Mansfield on the 18th. The average precipitation was 5.76, or 0.51 below normal; the greatest monthly amount, 13.33, occurred at Sugar Experiment Station, and the least, 1.13, at Shreveport.—*W. T. Blythe.*

Maryland and Delaware.—The mean temperature was 73.7°, or 1.9° above normal; the highest was 102°, at Boettcherville on the 23d, and the lowest, 36°, at Deepark on the 17th. The average precipitation was 2.69, or 0.42 below normal; the greatest monthly amount, 6.24, occurred at Deer Park, and the least, 1.05, at Coleman.—*O. L. Hassig.*

Michigan.—The mean temperature was 65.9°, or 0.7° above normal; the highest was 98°, at Port Austin on the 4th and Coldwater on the 7th, and the lowest, 22°, at Newberry on the 28th. The average precipitation was 2.99, or 0.33 below normal; the greatest monthly amount, 6.80, occurred at Calumet, and the least, 0.82, at Ionia.—*O. F. Schneider.*

Minnesota.—The mean temperature was 65.4°, or about 1.0° below normal; the highest was 95°, at Milaca on the 19th, and the lowest, 34°, at Mount Iron on the 8th. The average precipitation was 6.36, or about 2.00 above normal; the greatest monthly amount, 14.35, occurred at Minnesota City, and the least, 2.27, at Bemidji.—*T. S. Outram.*

Mississippi.—The mean temperature was 79.6°, or 0.6° below normal; the highest was 104°, at Brookhaven and Okolona on the 7th and 23d, respectively, and the lowest, 52°, at Lake, Louisville, Pearlinton, and Pontotoc on the 19th, 18th, 23d, and 18th, respectively. The average precipitation was 3.86, or 1.13 below normal; the greatest monthly amount, 9.20, occurred at Biloxi, and the least, 0.75, at Palo Alto.—*H. E. Wilkinson.*

Missouri.—The mean temperature was 73.4°; the highest was 101°, at Gayoso on the 21st, and the lowest, 42°, at Potosi on the 17th. The average precipitation was 3.98, or about 1.00 below normal; the greatest monthly amount, 9.05, occurred at Mount Vernon, and the least, 1.53, at Houston.—*G. J. O'Connor.*

Montana.—The mean temperature was 57.8°, or 1.8° below normal; the highest was 96°, at Billings and Glendive on the 26th and 28th, respectively, and the lowest, 26°, at Adel and Fort Yellowstone on the 8th and 6th, respectively. The average precipitation was 1.77, or 0.74 below normal; the greatest monthly amount, 7.37, occurred at Wibaux, and the least, trace, at Billings and Fort Yellowstone.—*E. J. Glass.*

Nebraska.—The mean temperature was 70.0°, or about 0.4° above normal; the highest was 108°, at Baker City on the 18th, and the lowest, 28°, at Kennedy on the 23d. The average precipitation was 3.83, or 0.07 below normal; the greatest monthly amount, 11.76, occurred at Tekamah, and the least, 0.80, at Seneca.—*G. A. Loveland.*

Nevada.—The mean temperature was 63.5°, or 2.5° above normal; the highest was 102°, at Silver Peak on the 19th and 23d, and the lowest, 24°, at Elko on the 6th. The average precipitation was 0.61, or about 0.18 above normal; the greatest monthly amount, 2.62, occurred at Palsade, while none fell at several stations.—*J. H. Smith.*

New England.—The mean temperature was 66.4°, or 1.5° above normal; the highest was 99°, at Bridgeport, Conn., on the 7th, and the lowest, 30°, at Grafton, N. H., on the 11th. The average precipitation was 2.38, or normal; the greatest monthly amount, 7.37, occurred at Jefferson, Mass., and the least, 1.04, at Portland, Me., and Concord, N. H.—*J. W. Smith.*

New Jersey.—The mean temperature was 72.3°, or 2.7° above normal; the highest was 103°, at Toms River on the 6th, and the lowest, 38°, at Charlotteburg on the 11th. The average precipitation was 2.50, or 0.88 below normal; the greatest monthly amount, 4.34, occurred at Englewood, and the least, 1.03, at Cape May City.—*E. W. McGann.*

New Mexico.—The mean temperature was 69.2°, or 1.1° below normal; the highest was 102°, at Gallinas Spring on the 20th, and Springer on the 11th, and the lowest, 17°, at Winsors on the 4th. The average precipitation was 1.03, or 0.06 below normal; the greatest monthly amount, 3.29, occurred at Winsors, while none fell at Gage.—*R. M. Hardinge.*

New York.—The mean temperature was 67.5°, or 1.2° above normal; the highest was 98°, at Cedar Hill on the 5th, Poughkeepsie, Brentwood, and Primrose on the 6th, Westpoint on the 7th, and Mount Morris on the 14th, and the lowest, 30°, at Oneonto on the 11th. The average precipitation was 2.39, or 1.32 below normal; the greatest monthly amount, 6.73, occurred at Carmel, and the least, trace, at Lyndonville.—*R. G. Allen.*

North Carolina.—The mean temperature was 75.8°, or 0.5° above normal; the highest was 103°, at Tarboro on the 8th, and the lowest, 39°, at Linnville on the 19th. The average precipitation was 4.07, or 0.29 below normal; the greatest monthly amount, 8.16, occurred at Highlands, and the least, 0.84, at Settle.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 62.4°, or 2.2° below normal; the highest was 96°, at Woodbridge and Fort Yates on the 29th, and the lowest, 30°, at Glen Ullin on the 1st. The average precipitation was 4.02, or 0.18 above normal; the greatest monthly amount, 9.02, occurred at Towner, and the least, 1.40, at New England City.—*B. H. Bronson.*

Ohio.—The mean temperature was 71.5°, or 1.2° above normal; the highest was 102°, at Seaman on the 22d, and the lowest, 36°, at Orangeville on the 17th. The average precipitation was 2.96, or 0.56 below normal; the greatest monthly amount, 7.68, occurred at Pataskala, and the least, 1.02, at Willoughby.—*J. Warren Smith.*

Oklahoma.—The mean temperature was 73.7°, or 2.7° below normal; the highest was 106°, at Beaver on the 19th, and the lowest, 52°, at Tahlequah on the 18th. The average precipitation was 5.06, or 1.93 above normal; the greatest monthly amount, 8.26, occurred at Hope-ton, and the least, 2.19, at Healdton.—*J. I. Widmeyer.*

Oregon.—The mean temperature was 58.1°, or 1.3° below normal; the highest was 98°, at Beulah on the 15th, and the lowest, 17°, at Silver Lake on the 5th. The average precipitation was 0.99, or 0.50 below normal; the greatest monthly amount, 3.51, occurred at Bay City, while none fell at P. Ranch.—*B. S. Pague.*

Pennsylvania.—The mean temperature was 69.9°, or 1.5° above normal; the highest was 101°, at Wilkesbarre on the 6th, and the lowest, 32°, at Dushore, on the 11th. The average precipitation was 3.51, or 0.28 below normal; the greatest monthly amount, 5.97, occurred at Chambersburg, and the least, 0.65, at White Haven.—*T. F. Townsend.*

South Carolina.—The mean temperature was 79.4°, or 1.9° above normal; the highest was 105°, at Greenwood on the 9th and the lowest, 48°, at Shaws Fork on the 17th. The average precipitation was 3.89, or 0.73 below normal; the greatest monthly amount, 8.55, occurred at Blackville, and the least, 1.38 at Santuck.—*J. W. Bauer.*

South Dakota.—The mean temperature was 66.4°, or about 1.0° below normal; the highest was 108°, at Cherry Creek (P. O. Leslie) on the 29th, and the lowest, 25°, at Rochford on the 7th. The average precipitation was 3.69, or about 0.09 below normal; the greatest monthly amount, 7.86, occurred at Centerville, and the least, 0.96, at Hot Springs.—*S. W. Glenn.*

Tennessee.—The mean temperature, 76.6°, was about 2.0° above normal; the highest was 102°, at Madison on the 23d, and the lowest, 36°, at

at Erasmus on the 18th. The average precipitation was 2.71, or about 1.50 below normal; the greatest monthly amount, 6.14, occurred at Springdale, and the least, 0.12, at Madison.—*H. C. Bates.*

Texas.—The temperature on an average for the month, determined by comparison of 42 stations distributed throughout the State, was 1.1° below the normal; there was a slight excess in a few localities over the northeastern portion, while there was a general deficiency ranging from 1.0° to 3.1° in all other sections, with the greatest over southwest Texas. The highest was 106°, at Sugarland on the 24th, and the lowest, 49°, at Amarillo on the 9th. The precipitation on an average for the month, determined by comparison of 47 stations distributed throughout the State, was 3.88 above the normal. About normal conditions prevailed along the immediate east and west coast districts and over the extreme west portion of the State, while there was a general excess elsewhere, ranging from 1.00 to 19.06, with the greatest in the vicinity of Fort Clark; the greatest monthly amount, 22.32, occurred at Fort Clark, and the least, 0.61, at El Paso.—*J. M. Cline.*

Utah.—The mean temperature was 64.0°, or 1.6° below normal; the highest was 110°, at Saint George on the 30th, and the lowest, 21°, at Snowville on the 25th and Woodruff on the 6th. The average precipitation was 0.59, or 0.17 above normal; the greatest monthly amount, 2.43, occurred at Tooele, while none fell at Kelton and Snowville.—*L. H. Murdock.*

Virginia.—The mean temperature was 74.0°, or about 1.0° above normal; the highest was 106°, at Doswell on the 7th, and the lowest, 40°

at Burkes Garden on the 18th. The average precipitation was 3.71 or 0.02 above normal; the greatest monthly amount, 7.60, occurred at Hot Springs, and the least, 1.11, at Manassas.—*E. A. Evans.*

Washington.—The mean temperature was 58.0°, or about 1.5° below normal; the highest was 97°, at Kennewick on the 17th, and the lowest, 31°, at Monte Cristo on the 5th. The average precipitation was 1.41, or 0.50 below normal; the greatest monthly amount, 5.81, occurred at Cedar Lake, and the least, 0.01, at Moxee.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 72.0°, or 0.9° above normal; the highest was 98°, at Eastbank on the 5th, New Cumberland, Upper Track, and Weston on the 24th, and the lowest, 35°, at Terra Alta on the 14th and 18th. The average precipitation was 4.99 or 0.91 above normal; the greatest monthly amount, 8.93, occurred at Oceana, and the least, 1.46, at Huntington.—*C. M. Strong.*

Wisconsin.—The mean temperature was 66.1°, or 0.2 below normal; the highest was 94°, at Prairie du Chien on the 20th, and Delavan on the 6th. The average precipitation was 5.54, or 1.35 above normal; the greatest monthly amount, 11.56, occurred at La Crosse, and the least, 1.60, at North Crandon.—*W. M. Wilson.*

Wyoming.—The mean temperature was 58.0°, or 1.5° below normal; the highest was 103°, at Bitter Creek on the 17th and Carbon on the 30th, and the lowest, 14°, at Rock Springs on the 7th. The average precipitation was 1.82 or slightly above normal; the greatest monthly amount, 5.50, occurred at Rock Springs, and the least, 0.18, at Evans-ton.—*W. S. Palmer.*

SPECIAL CONTRIBUTIONS.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

- American Journal of Science, New Haven, Vol. 8, 4th series.*
McLean, G. V. Velocity of Electric Waves in Air. P. 1.
Boletín Agrícola y Meteorológico, Barcelona, Año 1.
Lozano, E. Marcha media anual de la temperatura en Barcelona. P. 102.
Bulletin Mensuel de l'Observatoire de l'Orthez, 5me Année.
Leon, Henri. Orages dans les Pyrénées. P. 13.
Marchand. Origine solaire des orages. P. 14.
Picote, A. De la prévision du temps à courte échéance à l'aide du baromètre dans le département des Basses-Pyrénées. P. 17.
Ciel et Terre, Bruxelles, 20me année.
V. Ventosa. Direction du vent et la scintillation. P. 197.
Russell, Cte. H. Nuages et Montagnes. P. 210.
Spring, W. Remarques sur une note de M. Pernter, concernant la couleur bleue du ciel. P. 177.
Comptes Rendus, Paris, Tome 128.
Palladine, W. Modification de la respiration des végétaux à la suite des alternances de température. P. 1410.
Gutton, C. Comparaison des vitesses de propagation des ondes électromagnétiques dans l'air et le long des fils. P. 1508.
Geographical Journal, London, Vol. 14.
Murray, (Sir) J. Temperature of the Floor of the Ocean, and of the Surface Waters of the Ocean. P. 34.
Nature, London, Vol. 60.
Review of A. J. Henry. Wave or billow clouds. P. 235.
La Nature, Paris, 27 année.
Jullien, O. Un cyclone. P. 42.
Meteorologische Zeitschrift, Wien, Band 16.
Koch, K. R. Ein Normalbarometer. P. 193.
Hann, J. Einige Ergebnisse der meteorologischen Beobachtungen am Observatorium Vallot auf dem Mont Blanc. P. 198.
Billwiller, R. Ueber verschiedene entstehungsarten und Erscheinungsformen des Föhns. P. 204.
Hann, J. Die ungeheuren Regemengen am Fusse des Kamerun-Pik. P. 215.
Beyerlein, Fr. Einige Versuche über den Wasserverlust bei

- Regenmessungen durch Verdunstung und durch Befeuchtung des Regenmessers. P. 217.
Rona. Die Gewitter in Ungarn. P. 219.
Prohaska, K. Gewitter und Hagelschlag am 9 August, 1898, in den Ostalpen. Wetterschiessen. P. 224.
Prohaska, K. Gewitter in November 1898 in den Ostalpen. P. 226.
Penck, A. Ein mysteriöses Phänomen der Geophysik. P. 227.
Reimann. Die geometrischen Verhältnisse des Nordlichts vom 9 September, 1898, um 9.45 p. m. P. 230.
Wolfer, A. Wirbelsturm zu St. Vincent. P. 232.
L. E. D. Philosophical Magazine, London, Vol. 48.
Waidner, O. W., and Mallory, F. Comparison of Rowland's Mercury Thermometers with a Callendar-Griffiths Platinum Thermometer; Platinum Thermometer with a Tonnelot Thermometer Standardized by the Bureau International; Reduction of Rowland's Value of Mechanical Equivalent of Heat to Paris, Nitrogen Scale. P. 1.
Milner, S. R., and Chattock, A. P. Thermal Conductivity of Water. P. 46.
Knott, O. G. Reflexion and Refraction of Elastic Waves, with Seismological Applications. P. 64.
Maclean, G. V. Velocity of Electric Waves in air. P. 115.
Fisher, O. Residual Effect of Former Glacial Epoch upon Under-ground Temperature. P. 134.
Rayleigh, Lord. Theory of Anomalous Dispersion. P. 151.
Chree, C. Denudation and Deposition. P. 156.
Quarterly Journal of the Royal Meteorological Society, Vol. 25.
Bayard, F. Campbell. Government Meteorological Organizations in Various Parts of the World. P. 69.
Mawley, Edward. Report on the Phenological Observations for 1898. P. 133.
Davis, William Morris. Circulation of the Atmosphere. P. 160.
Scottish Geographical Magazine, Vol. 15.
(Review of T. H. Engelbrecht). Zones of Cultivation. P. 365.
Symons Meteorological Magazine, London, Vol. 34.
Clayton, H. H. Recent Recurrence in Weather; Lunar or 30-day Period. P. 68.
Jones, J. H. Black Rain. P. 73.
Das Wetter, 16 Jahrgang.
Less, Dr. Emil. Die wissenschaftlichen Grundlagen von Wetterprognosen für kurze und solchen für etwas längere Zeiträume. P. 121.
Meissner, Friedrich. Barometer und Niederschlag. P. 129.
Nippoldt, Jun., A. Cirrus und sein Werth für Prognosen auf den nächsten Tag nach A. Stanhope Eyre. P. 137.
Zeitschrift für Instrumentenkunde, Berlin, 19 Jahrg.
Sprung, A. Ueber den photogrammetrischen Wolkenautomaten und seine Justirung. (Fortsetzung P. 118. P. 131.
Zeitschrift für Luftschiffahrt, Berlin, 18 Jahr.
Hinterstoisser. Einige Daten über die simultanen Ballonfahrten am 24 März, 1899, in Wien. P. 104.
Deutsche Mechaniker Zeitung, Beiblatt zur Zeitschrift für Instrumentenkunde, 1899.
Scheel, Karl. Temperatur und Druckmessung. P. 81, 89.